

## XY-42A CORE DRILLING RIG

### I . Applications

XY-42A is a kind of core drill driven with Tungaloy-carbide-tipped bit and diamond-bit, small-diameter. It is mainly suitable for exploration of metal or non-metal solid mineral ore bed. It is widely applied in the field of geology, metallurgy, coal mine, hydrological and engineering drilling. It can also be used in the fields of superficial-zone petroleum and natural gas mining, mine workings ventilation and water discharge tunnel drilling as well as foundation pile construction in large diameter.

### II . Characteristics

1. With eight rotary speeds and reasonable ranges of speed (please see the list of spindle speed). Max. Torque 3.5 KN·m (2580 lbf·ft) (while with lower rotary Speed of spindle).

2. With large spindle I.D. 93mm (3.66 inch), the rig is driven by hydraulic double cylinders with much longer stroke up to 600mm (23.62 inch). The rig is suitable for various drilling technologies to improve drilling efficiency.

3. In two reverse speeds, it is suitable to deal with faulties.



4. With the features of reasonable power and lower oil temperature, it adopted simplex hydraulic gear pump for oil supplying.
5. Double-action hydraulic chuck in powerful clamping force.
6. In light weight, easy disassembling (into nine parts), and convenient for maintenance and repair, due to the advantages of compact structure and reasonable layout.
7. It steadies in the high drilling speed because of its smooth movement and low centre of gravity.
8. Fitted with measuring scale for your good knowledge of the drilling condition at the bottom of the hole; every handle can be operated nimbly and reliability.

### III Specifications

#### A: Drilling Capacity

##### 1. Core Drilling

Drill rod type		Drill rod size	Drilling depth
The rod made in China	Inside upset drill rod	42 mm (1.65 inch)	1100 m (3608 feet)
		50 mm (1.97 inch)	820 m (2690 feet)
		60 mm (2.36 inch)	610 m (2001 feet)
		53 mm (2.09 inch)	950 m (3116 feet)

		inch)	feet)
	Wire-line drill rod	71 mm (2.80 inch)	700 m (2296 feet)
		89 mm (3.50 inch)	550 m (1804 feet)
DCDMA rod	Inside upset drill rod	AW	1100 m (3608 feet)
		BW	820 m (2690 feet)
		NW	650 m (2132 feet)
		HW	430 m (1410 feet)
	Wire-line drill rod	AQ	1200 m (3936 feet)
		BQ	950 m (3116 feet)
		NQ	730 m (2394 feet)
		HQ	500 m (1640 feet)

			feet)
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## 2. Hydro-geological, water well drilling

Outside upset drill rod size	Hole dia.	Drilling depth
60 mm (2.36 inch)	200mm (7.87 inch)	400m (1312 feet)
73 mm (2.87 inch)	350mm (13.78 inch)	250m (820 feet)
89 mm (3.50 inch)	500mm (19.69 inch)	150m (5379 feet)

## 3. Foundation Pile Hole Drilling

A. Use outside upset drill rod of size 89mm (3.50 inch), hole dia.

Loose formation: 800mm (31.50 inch)

Hard rock formation: 500mm (19.69 inch)

Hole depth: 100m (328 feet)

### B. Drill Head

The drill head is hydraulic feed of double oil cylinders and mechanical transmission type.

Drilling rotation angle range: 0°—360°

### C. Spindle

The list of spindle speed (r/min)

Speed power stage number	Power machine speed 1500 r/min	Power machine speed 1000 r/min

Forward	Slow 4	82, 151, 215, 313	54. 100, 143,207
	High 4	251, 463, 661,961	166, 307, 437, 636
Reverse	Slow 1	67	44
	High 1	205	135

Max. Spindle torque

Power machine efficiency 30KW (40HP) speed 1500 r/min: 3.2 KN·m (2358 lbf·ft)

Power machine efficiency 22KW (29.5HP) speed 1000 r/min: 3.5 KN·m (2580 lbf·ft)

Max. Hoisting capacity: 80 KN (17984 lbf)

Max. Feed pressure: 60 KN (13488 lbf)

Spindle stroke: 600 mm (23.62 inch)

Spindle I.D.: 92 mm (3.62 inch)

D. Hoister

Lifting speed (3rd layer single line)

Power machine speed 1500 r/min: 0.78, 1.44, 2.06, 2.99 m/s (2.56, 4.72, 6.76, 9.81 feet/s)

Power machine speed 1000r/min: 0.52, 0.96, 1.36, 1.98 m/s (1.71, 3.15, 4.46, 6.49 feet/s)

Max. Single line lifting capacity

Power machine efficiency 30kw (40HP) speed 1500 r/min: 30 KN (6744 lbf)

Power machine efficiency 22kw (29.5HP) speed 1000 r/min: 34 KN (7643 lbf)

Wire rope dia.: 16 mm (0.63 inch)

Drum capacity: 90 m (295.2 feet)

Drum dia.: 285 mm (11.22 inch)

Brake drum dia.: 490 mm (19.29 inch)

Brake band width: 120 mm (4.72 inch)

E. Clutch and Speed Change Box

Dry-type single plate friction clutch.

In speed change box, the speed is changed by sliding gear forward 4, reverse 1.

F. Skid-type Frame (with slide base)

Remove length: 460 mm (18.11 inch)

Distance between drill and hole top: 310 mm (12.20 inch)

G. Oil Pump

Single Gear Pump

Displacement: 32+12 L/min (8.5+3.2 US gallons/min)

Working pressure: 0—8 Mpa (0-1160 psi)

Max. Pressure: 12 MPa (1740 psi)

Speed (r/min): 1500

H. Drill Power

Name type	Electric motor Y200L-4	Deutz F4L 912 diesel engine
Power	30 KW(40HP)	38KW (51HP)
Speed	1500 r/min	1800 r/min

I. Dimensions (L×W×H): 2730×1100×1860 mm (107.5×43.3×73.2 inch)

J. Weight (excluding power unit): approx. 1800 kg (3969 lb)